

## Daniel Ivan Leskovar

### PERSONAL INFORMATION

**Rank** Professor, Vegetable Stress Physiology – Horticultural Sciences  
**Affiliation** Texas A&M AgriLife Research & Extension Center at Uvalde  
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### EDUCATION

Universidad del Comahue, Argentina, Ing. Agr. (B.S.), Horticulture  
University of Wageningen, The Netherlands, Graduate Training  
University of California, Davis, MS., Vegetable Crops, 1986  
University of Florida, Ph.D., Vegetable Crop Physiology, 1991

### PROFESSIONAL EXPERIENCE

1991-1996 Assistant Professor, Vegetable Physiology, Texas A&M University  
1997-2003 Associate Professor, Vegetable Physiology, Texas A&M University  
2004 - Professor, Vegetable Physiology, Texas A&M University  
2006 - Assistant Director- Vegetable and Fruit Improvement Center  
2011- Center Director, Texas A&M AgriLife Research, Uvalde  
2016 Chair Council of Resident Directors, Texas A&M AgriLife Research

### RESEARCH

The program is centered in the identification and understanding of plant morphological and physiological adaptation mechanisms to environmental stresses and in the development of sustainable vegetable cropping systems. Major crops under investigation are muskmelon, watermelon, sweet and hot peppers, tomato, artichoke, lettuce, spinach and onion. The research emphasis is on: 1) seed-transplant production and physiology to increase plant survival under drought, nitrogen deficit and heat stress, 2) growth promoters, signaling compounds (ABA, CKs, 1-MCP, ethylene) and soil amendments to modulate seedling, plant and fruit growth, 3) root and shoot developmental trait responses to water conservation strategies and cropping systems, 4) cultivar and fertility management for organic production, 5) protected cultivation and hydroponic systems for leafy greens and grafted tomato, 6) phytochemicals and sensory attributes related to crop management, and 7) genotype selection and development for drought and heat tolerance, high yield, water use efficiency, and quality.

### SELECTED HONORS & AWARDS

1984 Fulbright Fellowship, UC Davis, California  
1985 Pacific Seed Association Annual Award, California  
1990 John Carew Scholarship, Michigan  
1990 Best Paper Award, Florida State Hort. Society  
1995 Brazil-Dutch Fellowship for Research/Extension review of EMBRAPA  
2007 Vice Chancellor Award in Excellence for Research – Texas A&M System  
2008 Texas Commission on Environmental Quality, Agriculture-Team Award  
2016 Team Award for Superior Service, Texas A&M AgriLife Extension

### SELECTED PROFESSIONAL ACTIVITIES

- Vegetable Publication Award Committee ASHS (1995 and 2001)

Secretary (2004), Vice-Chair (2005), and Chair (2006) W-1168 Multi-State Regional Project: 'Environmental and Genetic Determinants of Seed Quality and Performance'

- Convener 4<sup>th</sup> ISHS Symposium on Seeds and Stand Establishment, San Antonio (2006)
- Chair ISHS Working Group on Crop Establishment, Seed and Transplant Technology (since 2007)
- Vice-chair ISHS Section Vegetables (2010-2014)
- Chair ISHS Section Quality Production Systems - Leafy Green and Non-Root Vegetables (2014-2018)

#### **EDITORIAL BOARDS**

2004-2015 Associate Editor, Journal of Horticultural Science & Biotechnology, U.K.  
2014- Associate Editor, South African Journal of Plant and Soil  
2015- Advisory Board, European Journal of Horticultural Science

#### **PROFESSIONAL AFFILIATIONS**

International Society for Horticultural Sciences (ISHS)  
American Society of Horticultural Sciences (ASHS), Southern Region ASHS  
Plant Growth Regulation Society of America (PGRSA)  
South African Society of Horticultural Science (SASHS)  
Research Center Administrators Society (RCAS)

#### **CURRENT PROJECTS (2016-2017)**

- Vegetable cropping system management in relation to environmental stresses. HATCH 8098.
- Environmental and genetic determinants of seed quality and performance. W-3168.
- Nitrogen management for improving olive stand establishment. TDA-SCBG-USDA.
- Conserving water in rural and urban vegetable farming - hydroponics. TDA-SCBG-USDA.
- 1-MCP to modulate growth of tomato and pepper transplants. AgroFresh.
- Novihum: Impact on growth, water use efficiency, quality and yield of bell pepper. GmbH.
- Hormonal regulation and transplant systems in onion genotypes. AgriLife Cropping System.
- Tomato grafting for protected and open field systems in Texas. Vegetable Seed Grant Program.
- Stand establishment and GA application strategies for artichokes.

#### **INTERNATIONAL PROJECTS**

- Enhancing horticultural crop production and commercialization of small-scale South African farmers. Texas A&M AgriLife Research and Tshwane University of Technology (TUT), South Africa (2013-2016).

#### **PUBLICATIONS (last 6 years)**

Shinohara, T. Martin, E.A., and D.I. Leskovar. 2017. Ethylene regulators influence germination and root growth of globe artichoke seedlings exposed to heat stress conditions. *Seed Science and Technology* (In press).

Sharma, S.P., Leskovar, D.I., Crosby, K. and A. Volder. 2016. Root growth dynamics and fruit yield of melon (*Cucumis melo* L) genotypes at two locations with sandy loam and clay soils. *Soil & Tillage Research* (In press).

Leskovar, D. and Y. Othman. 2016. Low nitrogen fertigation promotes root development and transplant quality in globe artichoke. *HortScience* 51(5):1-6.

Leskovar, D.I. and Othman, Y. (2016). Pre-transplant conditioning to mitigate heat, drought and biotic stresses in artichoke. *Acta Hort.* 1147, 145-154 DOI: 10.17660/ActaHortic.2016.1147.20

<https://doi.org/10.17660/ActaHortic.2016.1147.20>

Leskovar, D.I. and Othman, Y. (2016). Morpho-physiological characteristics and yield of early and mid-season globe artichoke. *Acta Hort.* 1147, 155-158 DOI: 10.17660/ActaHortic.2016.1147.21

<https://doi.org/10.17660/ActaHortic.2016.1147.21>

- Segovia, M.S., Palma, M.A. and Leskovar, D.I. (2016). Factors affecting consumer preferences and willingness to pay for artichoke products. *Acta Hort.* 1147, 271-280  
DOI: 10.17660/ActaHortic.2016.1147.38 <https://doi.org/10.17660/ActaHortic.2016.1147.38>
- Leskovar, D.I., Othman, Y. and X. Dong. 2016. Strip tillage improves soil biological activity, fruit yield and sugar content of triploid watermelon. *Soil & Tillage Research*, 163:266-273. (doi: 10.1016/j.still.2016.06.007)
- Leskovar, D.I. and S.P. Sharma. 2016. Irrigation management for greenhouse vegetable transplants. In: Nascimiento, W. (ed). *Vegetable Transplant Production*. Embrapa, Brazil pp. 111-129.
- Liu, X., Dong, X. and D. I. Leskovar. 2016. Ground penetrating radar for underground sensing in agriculture: a review. *Int. Agrophys.* 30(4)1-11. (doi: 10.1515/intag-2016-00010)
- Dong, X., W. Xu, Y. Zhang, D. Leskovar. 2016. Effect of irrigation timing on root zone soil temperature, root growth and grain yield and chemical composition in corn. *Agronomy* 6, 34. (doi: 10.3390/agronomy6020034)
- Crosby, M.C., Leskovar, D.I., Jifon, J.L. and J. Masabni. 2015. 'Pacal' Orange Casaba: A Multi-disease Resistant, Specialty Melon Cultivar from Texas A&M AgriLife Research. *HortScience* 50:1723-1725.
- Dev Kumar, G., Crosby, K., Leskovar, D., Bang, H., Jayaprakasha, G.K., Patil, B. and S. Ravishankar. 2015. A surveillance of cantaloupe genotypes for the prevalence of *Listeria* and *Salmonella*. *Agriculture, Food and Analytical Bacteriology*, 5: 73-84.
- Agehara, S. and D.I. Leskovar. 2015. Growth suppression by exogenous abscisic acid and uniconazole for prolonged marketability of bell pepper transplants in commercial conditions. *Scientia Horticulturae*, 194:118-125.
- Xu, C. and D.I. Leskovar. 2015. Effects of *A. nodosum* seaweed extracts on spinach growth, physiology and nutrition value under drought stress. *Scientia Horticulturae* 183:39-47.
- Leskovar, D.I., Crosby, K., Palma M. and M. Edelstein. 2014. Vegetable Crops: Linking Production, Breeding and Marketing. 2014. In: Dixon, G.R. and D.E. Aldous. *Horticulture - Plants for People and Places*. Volume 1. Springer Business + Media, Dordrecht, the Netherlands.
- Wang, T., Leskovar, D.I. and B.G. Cobb. 2014. Respiration during germination of diploid and triploid watermelon. *Seed Sci. & Technol.*, 42, 1-9.
- Bae, H., Jayaprakasha, G.K., Crosby, K., Yoo, K.S., Leskovar, D.I., Jifon, J., and B.S. Patil. 2014. Ascorbic acid, capsaicinoid, and flavonoid aglycone concentrations as a function of fruit maturity stage in greenhouse-grown peppers. *J. Food Composition and Analysis* 33:195-202.
- Xu, C. and D.I. Leskovar. 2014. Growth, physiology and yield responses of cabbage to deficit irrigation. *Horticultural Science* 41-3, 138-146.
- Bang, H., G. Yi, S. Kim, D.I. Leskovar and B.S. Patil. 2014. Watermelon lycopene  $\beta$ -cyclase: Promoter characterization leads to the development of a PCR marker for allelic selection. *Euphytica* (online first; DOI 10.1007/s10681-014-1158-5).
- Dong, X., Leskovar, D., Crosby, K. and T. Marek. 2014. Quantifying crop water use in arid and semi-arid regions: Opportunities based on soil-plant water relations. *J. Arid Land Studies*, Vol. 24-1: 141-144.
- Leskovar, D.I., Xu, C., Agehara, S., Sharma, S.P. And K. Crosby. 2014. Irrigation strategies for vegetable crops in water-limited environments. *J. Arid Land Studies*, Vol. 24-1: 133-136.
- Agehara, S. and D.I. Leskovar. 2014. Age-dependent effectiveness of exogenous abscisic acid in height control of bell pepper and jalapeño transplants. *Scientia Horticulturae* 175:193-200.
- Sharma, S.P., Leskovar, D.I., Crosby, K., Volder, A. and A.M.H. Ibrahim. 2014. Root growth, yield, and fruit quality responses of reticulatus and inodorus melons (*Cucumis melo* L.) to deficit subsurface drip irrigation. *Agricultural Water Management* 136:78-85.
- Agehara, S. and D.I. Leskovar. 2014. Growth reductions by exogenous abscisic acid limit the benefit of height control in diploid and triploid watermelon transplants. *HortScience* 49(4):1-7.

- Shinohara, T. and D.I. Leskovar. 2014. Effects of ABA, antitranspirants, heat and drought stress on plant growth, physiology and water status of artichoke transplants. *Scientia Horticulturae*, 165:225-234.
- Leskovar, D.I., Xu, C. and S. Agehara. 2013. Planting configuration and plasticulture effects on growth, physiology and yield of globe artichoke. *HortScience* 48(12):1496-1501.
- Crosby, K., Fery, R., Leskovar, D. and J. Butcher. 2013. 'CaroTex-312', a high yielding, orange-fruited, Habanero-type, F1 hybrid pepper. *HortScience* 48(8):1059-1061.
- Wen, Y., D.L. Rowland, G. Piccinni, J.T. Cothren, D.I. Leskovar, A.R. Kemanian, and J.D. Woodard. 2013. Lint yield, lint quality, and economic returns of cotton production under traditional and regulated deficit irrigation schemes in Southwest Texas. *Journal of Cotton Science* 17: 10-22.
- Agehara, S. and D.I. Leskovar. 2012. Characterizing concentration effects of exogenous abscisic acid on gas exchange, water relations, and growth of muskmelon seedlings during water stress and rehydration. *Journal of the American Society for Horticultural Science* 137(6):400-410.
- Burger, J., K. Crosby, K.S. Yoo, A. Ibrahim, D.I. Leskovar and J. Jifon. 2012. Environmental and genotypic variation of capsaicinoid and flavonoid concentrations in Habanero (*Capsicum chinense*) peppers. *HortScience* 47(5):574-579.
- Kahn, B. and D. Leskovar. 2012. Cropping systems. In: Russo, V. (ed) *Peppers: Botany, production and uses*. CABI. pp. 137-149.
- Leskovar, D. And B. Kahn. 2012. Stand establishment. In: Russo, V. (ed) *Peppers: Botany, production and uses*. CABI. pp. 112-124.
- Leskovar, D. , Agehara, S., Yoo, K. and N. Pascual-Seval. 2012. Crop coefficient-based deficit irrigation and planting density for onion: growth, yield and bulb quality. *HortScience* 47(1):31-37.
- Lee, E., Yoo, K., Leskovar, D. and B. Patil. 2012. Development of an automated method for Folin-Ciocalteu total phenolic assay in artichoke extracts. *Journal of Food Science*, 0846.R1
- Wang, T., Sistrunk, L.A., Leskovar, D.I. and B.G. Cobb. 2011. Characteristics of storage reserves of triploid watermelon seeds: associations of starch and mean germination time. *Seed Science and Technology*, 39, 318-326.
- Shinohara, T., Agehara, S., Yoo, K. and D.I. Leskovar. 2011. Irrigation and nitrogen management of artichoke: yield, head quality, and phenolic content . *HortScience* 46(3):377-386.

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